RE: Area Permit
Erwin Pino to: Arnold Bierschenk 11/08/2012 09:09 AM
Cc: Ray Leissner

From: Erwin Pino <erwin.pino@chaparralenergy.com>
To: Arnold Bierschenk/R6/USEPA/US@EPA
Cc: Ray Leissner/R6/USEPA/US@EPA
History: This message has been replied to and forwarded.

1 attachment

20121108085333278.pdf

Good Morning Arnold,

Here are the areas that we have decided to include in this Area Permit modification:

Area I Expanded Acreage Permit (Submitted to EPA in May, 2012): NE/4 Sec 10, N/2 Sec 11, NW/4 Sec 12, W/2 Sec 13, E/2 Sec 15, NE/4 Sec 22 and NW/4 Sec 24, of T27N-R05E

We also want to add the following areas in this modification:

S/2 Sec 1, all of Section 2, SE/4 Sec 3, E/2 Sec 12, E/2 Sec 13, SE/4 Sec 22, S/2 Sec 23, NE/4 & S/2 Sec 24, all of Section 25, all of Section 26, all of Section 35, all of section 36, all in Township 27N, Range 05E

All of Section 7, W/2 Sec 17, all of Section 18, all of Section 19, all of Section 20, SW/4 Sec 28, all of Section 29, all of Section 30, all of Section 31, all of Section 32, W/2 & SE/4 Sec 33, all in Township 27N, Range 06E

On the other hand, I want to let you know that we spoke with Ray Leissner yesterday regarding some old injector wells in phase I in which will be difficult to meet the requirements of the Area Permit because of the high cost and the possibility of increase the environmental risk and we also discussed about of the expansion of the Area I. He said that we should write a letter to Phillip Dellinger in which we expose all our concerns in regards to the language modification that we want to propose in order to comply with the permit conditions and operate this project in the most environmentally responsible manner.

I have attached a copy of this letter along with the attachments and I am sending the original to Philip Dellinger right now.

As we have previously agreed, I will be sending individual packages for each water and

CO2 injector within the Area Permit. Now, for the Area in expansion, Do I need to send to EPA all the tabulations, logs and core data as I did for the Area I & II? Or it will be only individual packages.

Thanks,

Erwin Pino
Regulatory Engineer
Chaparral Energy, L.L.C.
701 Cedar Lake Blvd.
Oklahoma City, Oklahoma 73114
Direct Phone (405) 426-4081
Direct Fax (405) 425-8681

From: Bierschenk.Arnold@epamail.epa.gov [mailto:Bierschenk.Arnold@epamail.epa.gov]

Sent: Tuesday, November 06, 2012 3:11 PM
To: Erwin Pino
Subject: Area Permit

Erwin,

As I work on modifying the area permit to include new areas, I need to know what the bounds of the modification will be. Here is what the original permit says:

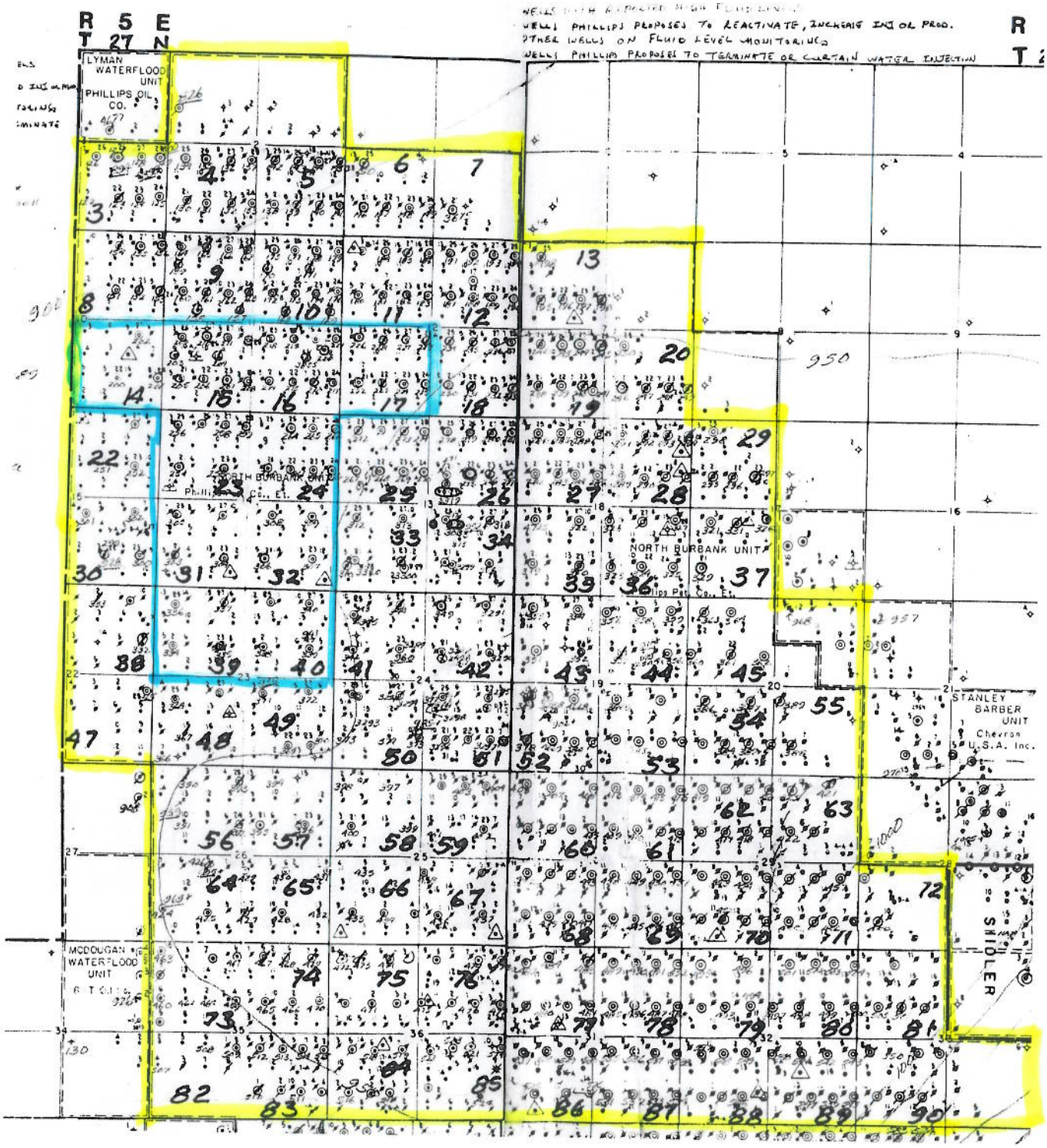
"...anywhere within the area included in: the SE/4 of Section 10, the S/2 of Section 11, the SW/4 of Section 12, all of Section 14, and the N/2 of Section 23, all in Township 27N, Range 5E "

Can you discuss internally and give me a listing of all the areas you wish to include in the modification? As we discussed, we don't think doing phase II, phase III, IV, etc is very efficient, so let's try to go 3-4 yrs down the road on this. I am assuming we will stay in Township 27N, but how far east will we go, and what sections do you want to cover?

If you could give me an idea of the area you want, written in essentially the same format as above, that would be great.

Also, have the results of the monitor well sampling event been compiled yet?

OS6273 Chaparral Area Permit



– Phase I original area

– expanded modification area

Chaparral Energy, L.L.C.

November 8, 2012

Mr. Philip Dellinger
U. S. Environmental Protection Agency
Region 6 Office
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Area Permit – Pre-Existing Injection Wells
North Burbank Unit- CO2 Phase I
Location: SE/4 Sec 10, S/2 Sec 11, SW/4 Sec 12, all of Section 14
and the N/2 of Section 23, all in Township 27N, Range 5E
Osage County, Oklahoma
Permit No. 06S124P6273

Mr. Dellinger:

We appreciated the recent opportunity to meet with yourself and other EPA personnel to discuss our North Burbank Unit CO2 project. As we have previously stated, the project is a significant undertaking for Chaparral and we have the upmost desire to operate the project in the most environmentally responsible manner.

Among the many issues that we discussed during our visit was the status of the injection wells that were drilled and completed in the 1950's & 60's by a former operator. There are approximately thirty such wells in the permitted area (see Attachment A) and all have been operated as injectors for many years under prior permits authorized by the EPA. As you know, such existing wells may be added to the Permit, but must comply with the requirements of the Permit, specifically Part I. A. Unfortunately, to meet the requirements of the Permit in these wells will be difficult to accomplish (if not impossible), very costly ($1.0-1.5MM), and more importantly, the required work could possibly leave the wells in a condition that would increase their environmental risk.

These wells were originally completed with 4-1/2" casing, but during the past several years 3-1/2" liners were installed. At the same time, cement was also placed behind the original 4-1/2" casing from the surface to a depth of approximately 325' (see Attachment B). All such well work was approved by the EPA.

In order for these wells to now meet the requirements of the Permit the 3-1/2" and 4-1/2"casing will need to be perforated and cement placed behind the 4-1/2" casing from a depth of 500' up to approximately 325' (Special Permit condition I.A.3). This would not only be difficult, but the end result could never be assured. Additionally, such procedure would, of course, weaken the integrity of the 3-1/2" casing, increasing the possibility of MIT failure and providing a potential avenue for CO2 migration at a very shallow depth.

Chaparral Energy, L.L.C.

Furthermore, to add the existing injection wells to the Permit will also require submission of cementing records and a bond log or temperature survey (Special Permit Condition I.A.4). As mentioned above, the subject wells were drilled and completed several years ago by a former operator. Because of their age and ownership history the well records are not complete, however, we have been able to locate cementing reports, which we believe clearly demonstrates that sufficient cement was pumped to achieve a minimum of 1000' of coverage above the producing zone. In some cases, the old well reports state the top of cement as high as 1700' above the Burbank. Attached are representative cementing records, cementing tickets, well reports, and other supporting documents.

In summary, it appears that the Area Permit may not have given full consideration of the construction of the older, pre-existing injection wells and, therefore, full and exact compliance with the Permit as currently written may not be possible. However, Chaparral strongly believes the construction of these wells and the supporting data and information is sufficient to insure the environmentally safe operation of the wells. As a result, we respectfully request the wells listed in Attachment A be approved for addition to the Area Permit based upon submission of historical cementing records and other well information sufficient to demonstrate and provide assurance that cement has been placed above the producing formation to adequately meet the requirements of Permit section I.A.1. Further, the information would also provide assurance that cement (or casing and cement) has been placed from 50 feet below the USDW and extending to the surface. Of course, compliance with all other Permit requirements for the operation of these wells will be rigorously maintained.

As stated during our visit, CO2 injection is scheduled to begin in mid-December, therefore, your response to our request is needed as soon as possible. We are prepared to provide any required information and would certainly welcome the opportunity to discuss further including another visit to your office. With this in mind, I will be contacting you shortly to discuss this matter. Conversely, please contact me if you wish to discuss further (405-830-1353).

Sincerely,

Larry Brinlee

Larry Brinlee
Vice-President – Operations
Mid-Continent Region

Enclosures

CC: Mr. Ray Leissner, USEPA Region 6, Dallas, Texas
MR. Arnold Bierschenk, USEPA Region 6, Dallas, Texas

701 Cedar Lake Boulevard 405-478-8770
Oklahoma City, OK 73114

ATTACHMENT A

OLD INJECTORS (**PHASE I**)

WELL NAME	LOCATION	TYPE
NBU #14-W3B	SE/4 Sec 10-27N-05E	H_2O
NBU #14-W5	SE/4 Sec 10-27N-05E	H_2O
NBU #14-W10	SE/4 Sec 10-27N-05E	H_2O
NBU #14-W22	SE/4 Sec 10-27N-05E	H_2O
NBU #14-W24	SE/4 Sec 10-27N-05E	CO_2
NBU #15-W21	SW/4 Sec 11-27N-05E	CO_2
NBU #15-W22	SW/4 Sec 11-27N-05E	CO_2
NBU #15-W24	SW/4 Sec 11-27N-05E	CO_2
NBU #15-W25	SW/4 Sec 11-27N-05E	CO_2
NBU #15-W27	SW/4 Sec 11-27N-05E	CO_2
NBU #16-W22	SE/4 Sec 11-27N-05E	CO_2
NBU #16-W24	SE/4 Sec 11-27N-05E	CO_2
NBU #16-W25	SE/4 Sec 11-27N-05E	CO_2
NBU #16-W27	SE/4 Sec 11-27N-05E	CO_2
NBU #17-W24	SW/4 Sec 12-27N-05E	H_2O
NBU #17-W25	SW/4 Sec 12-27N-05E	H_2O
NBU #17-W27	SW/4 Sec 12-27N-05E	H_2O
NBU #23-W21	NW/4 Sec 14-27N-05E	CO_2
NBU #23-W23	NW/4 Sec 14-27N-05E	CO_2
NBU #23-W25	NW/4 Sec 14-27N-05E	CO_2
NBU #23-W28	NW/4 Sec 14-27N-05E	CO_2
NBU #24-W21	NE/4 Sec 14-27N-05E	CO_2
NBU #24-W24	NE/4 Sec 14-27N-05E	CO_2
NBU #24-W27	NE/4 Sec 14-27N-05E	CO_2
NBU #31-W23	SW/4 Sec 14-27N-05E	H_2O
NBU #31-W25	SW/4 Sec 14-27N-05E	CO_2
NBU #32-W23	SE/4 Sec 14-27N-05E	H_2O
NBU #32-W25	SE/4 Sec 14-27N-05E	CO_2
NBU #32-W27	SE/4 Sec 14-27N-05E	CO_2
NBU #39-W25	NW/4 Sec 23-27N-05E	H_2O
NBU #40-W03	NE/4 Sec 23-27N-05E	H_2O
NBU #40-W15	NE/4 Sec 23-27N-05E	H_2O

CHAPARRAL ENERGY

ATTACHMENT B

SHIDLER DISTRICT

WELL COMPLETION SKETCHES

N.B.U. 23W28	NORTH BURBANK UNIT	9/5/2012
WELL	**FIELD**	**DATE**

E.P.A.# OS 0259

■ PRESENT COMPLETION

SUGGESTED COMPLETION

ORIGINAL COMPLETION

WELL CLASS: INJECTION

PERMANENT WELL BORE
KB: 1,124.05'
GL: 1,115.47'

DATA ON THIS COMPLETION

D&C. 12/19/1962
I.P. 303 bwpd on vav.
INITIAL TREATMENT
1/10/1963, 125 gals mud acid

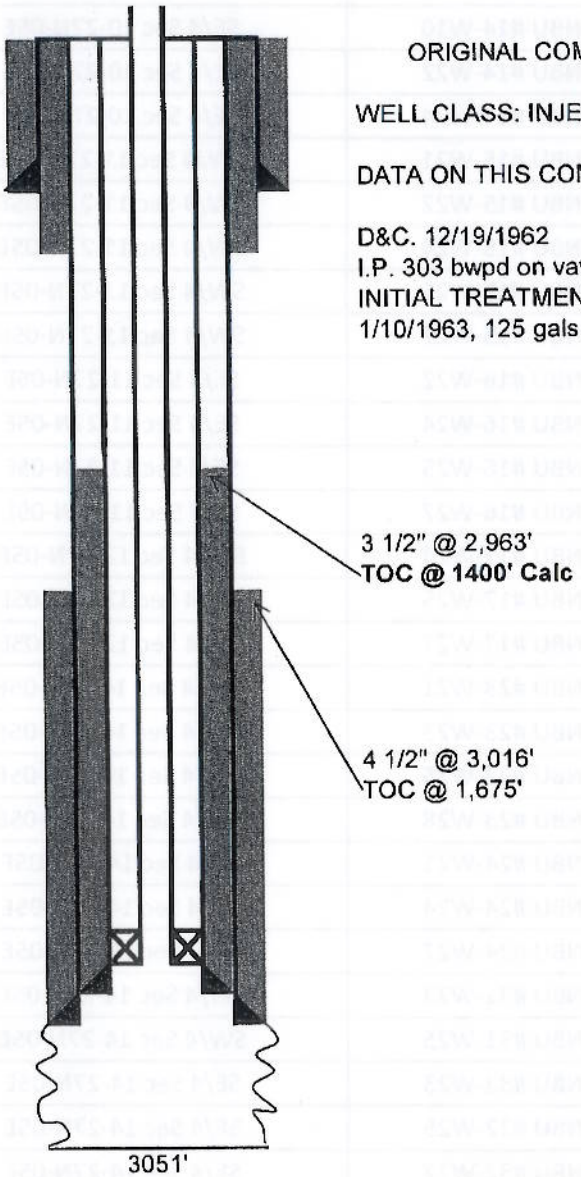
Legal: 420' FNL, 75' FEL, NW/4 sec 14-27N-5E, Osage Co, Ok.

8-5/8" @ 121' w/ 105sxs

4-1/2" @ 3016' w/ 110sxs 30% DD
TOC @ 1675'

4/13/2011, Run 101 jts 3 1/2" liner bottom 3 jts are chrome. Cement W/ 150 sks reg cemt 2% gel @ 2,963' cement down 1" @ 320 between 4 1/2" & 8 5/8" W 150 sks reg, cemt to surface.

8/13/2012, run 91 jts 2 1/16" tbg W/ Arrow X-1 pkr set @ 2,960'



ZONE:
BURBANK FORMATION
3'006' to 3,048'

Osage Form 139

United States
Department of the Interior
Osage Indian Agency
Pawhuska, Oklahoma

Date: May 17, 2011

Application For the Operation or Report on Wells

North Burbank Unit Tract 23

Fee Land		
(Commencement money paid to whom)	(Date)	(Amount)

Well No. W28 is located 420 Ft. from N line and 75 Ft. from E line

NW/4 Sec 14	27N	05E	Osage County, Oklahoma
(¼ Sec & Sec. No.)	(Twp)	(Range)	

The elevation of the ground level above sea level is 1115 Ft.

OS# 0259

Use This Side to Request Authority for Work (Three Copies Required)	Use This Side To Report Completed Work (One Copy Required)

Use This Side to Request Authority for Work
(Three Copies Required)

Notice of Intention To:

- Drill ☐
- Plug ☐
- Deepen or plug back ☐
- Convert ☐
- Pull or alter casing ☐
- Formation Treatment ☐
- .... ☐

Details of Work

Drilling applications will [illegible] proposed TD & horizon to be tested. Show size & length of casings to be used; indicate proposed mudding, cementing & other work. Plugging applications shall set forth reasons for plugging & detailed statement of proposed work. Plugging will not commence until 10 days following the approval date unless authority granted for earlier commencement. [illegible] filing fee is also required with each application to plug.

_______ Bbls oil _______ Bbls water in 24 hrs

I understand that this plan of work must receive approval in writing of the Osage Indian Agency before operations may be commenced.

Lessee:

Signature: ____________________

Title: ____________________

Address: 701 Cedar Lake Blvd., Oklahoma City, Oklahoma 73114

Use This Side To Report Completed Work
(One Copy Required)

Character of Well (oil, gas or dry) Injection

Subsequent Report of:

- Conversion ☐
- Formation Treatment ☐
- Altering casing ☒
- Plugging Back ☐
- Plugging ☐

Details of Work & Results Obtained

MIRU. Pulled 1/4" stainless out, parted, left 200' in hole. POOH w/tbg & pkr, had to work last 10 jts, pkr & stainless out hole. TIH w/3-3/4" blunt nose mill, DC's & tbg to 3040'. POOH w/BHA. RU Elite WL. Set 4-1/2" composite plug @ 2978'. RD Elite. TIH w/101 jts 3-1/2" FJ 9.30 lbs/ft, btm 3 jts chrome pipe. Set floatshoe @ 2963'. RU GC Cementers. Pumped 150 sks reg cmt w/2% gel. Ran 320' of 1" tbg down 4-1/2" x 8-5/8" annulus & pumped 150 sks reg cmt to surface. WOC. TIH w/bit & tbg. RU Power swivel. Drilled out floatshoe, 4-1/2" composite plug & ran bit to TD of 3051'. Circ hole clean. POOH w/BHA. (OVER)

Work commenced: 4/8/2011

Work completed: 4/21/2011

(Continue on reverse if necessary)

This block for plugging information only

Casing Record

Size	In Hole When Started	Amt. Recovered	If Parted Depth	How

Original TD

Lessee: Chaparral Energy, L.L.C.

By: David P. Spencer

David P. Spencer Manager of Regulatory Affairs

Subscribed and sworn to before me this 17th day of May 2011.

JANE A. KITCHENS
Notary Public
State of Oklahoma
Commission # 10000641 Expires 01/29/14

Jane A. Kitchens #10000641 Notary Public My Commission Expires January 29, 2014

Fw: Request for reconsideration of upper casing construction standards in the general permit

Ray Leissner to: Philip Dellinger, Arnold Bierschenk 11/20/2012 03:19 PM

From: Ray Leissner/R6/USEPA/US
To: Philip Dellinger/R6/USEPA/US@EPA, Arnold Bierschenk/R6/USEPA/US@EPA

FYI

Ray Leissner, Env. Eng.
Ground Water / UIC Section (6WQ-SG)
(214) 665 - 7183
USEPA, Region 6

The FIRST STEP in protecting your ground water is to have your well tested.

----- Forwarded by Ray Leissner/R6/USEPA/US on 11/20/2012 03:19 PM -----

From: Ray Leissner/R6/USEPA/US
To: erwin.pino@chaparralenergy.com, larry.brinlee@chaparralenergy.com
Date: 11/20/2012 03:02 PM
Subject: Request for reconsideration of upper casing construction standards in the general permit

Erwin, Larry,

Arnold and I discussed the request as put forth in Larry's letter of November 8, 2012. We are in agreement that it is prudent not to jeopardize the integrity of the 3.5" liner. While we will offer that position to Phil, I cannot promise he will agree. Phil is out until Monday the 26th. If he is in agreement, Arnold proposes that we can remedy the situation by doing a non substantial revision to the General Permit Part I A. 3. to read:

3. For those existing wells without surface casing or whose surface casing does *not* extend at least 50 feet below the USDW, the outermost casing(s) must be cemented at least 50' below the USDW to surface.

If we are able affect those changes, it would appear to me that the example well would be constructed sufficiently to meet the GP's requirements.

Thanks.

Ray Leissner, Env. Eng.
Ground Water / UIC Section (6WQ-SG)
(214) 665 - 7183
USEPA, Region 6

The FIRST STEP in protecting your ground water is to have your well tested.